A. Authorized Activities

This permit authorizes the following impacts as indicated in the application dated October 10, 2007, and received by DEQ on October 19, 2007. The permit authorization and conditions are also based on additional submittals approved by DEQ.

1. The permanent placement of fill material into 3880 linear feet of an unnamed tributary to Meade Creek in order to accommodate the construction of the Curley Hollow Solid Waste Management Facility.

2. The permanent placement of fill material into three wetlands identified in the application as W-12, W-17 and W-20 (approximately 0.42 acres total) in order to accommodate the construction of the Curley Hollow Solid Waste Management Facility.

B. Permit Term

This permit is valid for 15 years from the date of issuance. The permittee shall notify DEQ in writing at least 120 calendar days prior to the expiration of this permit if an extension of the permit term is required.

C. Standard Project Conditions

1. The activities authorized by this permit shall be executed in such a manner that any impacts to stream beneficial uses are minimized. As defined in § 62.1-44.3 of the Code, "beneficial use" means both instream and offstream uses. Instream beneficial uses include, but are not limited to, the protection of fish and wildlife resources and habitat, maintenance of waste assimilation, recreation, navigation, and cultural and aesthetic values. The preservation of instream flows for purposes of the protection of navigation, maintenance of waste assimilation capacity, the protection of fish and wildlife resources and habitat, recreation, cultural and aesthetic values is an instream beneficial use of Virginia's waters. Offstream beneficial uses include, but are not limited to, domestic (including public water supply), agricultural uses, electric power generation, commercial, and industrial uses.

2. No activity shall substantially disrupt the movement of aquatic life indigenous to the water body, including those species that normally migrate through the area except as authorized by Part I.A.1 of this permit.

3. Flows downstream of the project area shall be maintained to protect all uses.

4. The activity shall not impede the passage of normal or expected high flows, and any associated structure shall withstand expected high flows.

5. Continuous flow of perennial springs shall be maintained by the installation of spring boxes, French drains, or other similar structures.

6. All excavation, dredging, or filling in surface waters shall be accomplished in a manner that minimizes bottom disturbance and turbidity. Turbidity levels downstream of the construction site shall not exceed turbidity levels upstream of the construction site at any time.

7. All in-stream activities shall be conducted during low-flow conditions whenever practicable.

8. All construction, construction access, and demolition activities associated with this project shall be accomplished in a manner that minimizes construction materials or waste materials from entering surface waters, unless authorized by this permit. Wet, excess, or waste concrete shall be prohibited from entering surface waters.

9. All fill material placed in surface waters shall be clean and free of contaminants in toxic concentrations or amounts in accordance with all applicable laws and regulations.

10. Stormwater runoff shall be prohibited from directly discharging into any surface waters. Best management practices (BMP) designed, installed, and maintained, as described in the Virginia Erosion and Sediment Control Handbook (Third Edition, 1992, or the most recent version in effect at the time of construction) and the Virginia Stormwater Management Handbook (First Edition, 1999, or the most recent version in effect at the time of construction), shall be deemed suitable treatment prior to discharge into surface waters. Installation of alternative practices not described in these references shall be submitted to DEQ for approval prior to beginning construction.

11. Measures shall be employed at all times to prevent and contain spills of fuels, lubricants, or other pollutants into surface waters.

12. Machinery or heavy equipment in temporarily impacted wetlands shall be placed on mats or geotextile fabric, or other suitable means shall be implemented, to minimize soil disturbance to the maximum extent practical. Mats, fabrics, or other measures shall be removed as soon as the work is complete in the temporarily impacted wetland.

13. Heavy equipment is authorized for use within the stream channel during project construction or stream restoration activities when site conditions prohibit access from the streambank. The equipment shall be stationed on cobble bars and the activities conducted in the dry or during low flow conditions, whenever possible.

14. Temporary disturbances to wetlands, stream channels, and/or stream banks during project construction activities shall be avoided and minimized to the maximum extent practicable.

15. All temporarily disturbed wetland areas shall be restored to preconstruction conditions within **30 calendar days** of completing work in the areas, which shall include re-establishing pre-construction contours, and planting or seeding with appropriate wetland vegetation according to cover type (emergent, scrub/shrub, or forested), except for invasive species identified on DCR's Invasive Alien Plant Species of Virginia list. If construction takes place during the growing season, a temporary herbaceous cover will be

established and appropriate woody species will be planted during the following dormant season. The permittee shall take all appropriate measures to promote and maintain the revegetation of temporarily disturbed surface waters through the **second year post-disturbance**.

16. All temporarily impacted streams and stream banks shall be restored to their original elevations and contours within **30 calendar days** following the construction at that stream segment, and the banks shall be seeded or planted with the same vegetative cover type originally present along the banks, including supplemental erosion control grasses if necessary but not including invasive species identified on DCR's Invasive Alien Plant Species of Virginia list. If construction takes place during the growing season, a temporary herbaceous cover will be established and appropriate woody species will be planted during the following dormant season. The permittee shall take all appropriate measures to promote and maintain the revegetation of temporarily disturbed surface waters through the **second year post-disturbance**.

17. All materials (including fill, construction debris, excavated materials, and woody materials, that are temporarily placed in wetlands, in stream channels, or on stream banks) shall be placed on mats or geotextile fabric, shall be immediately stabilized to prevent the material or leachate from entering surface waters, and shall be entirely removed within **30 calendar days** following completion of that construction activity. After removal, disturbed areas shall be returned to original contours, shall be stabilized, and shall be restored to the original vegetated state within **30 calendar days**. The permittee shall take all appropriate measures to promote and maintain the revegetation of temporarily disturbed surface waters through the **second year post-disturbance**.

18. Temporary in-stream construction features such as cofferdams shall be made of non-erodible materials.

19. Virginia Water Quality Standards shall not be violated in any surface waters as a result of the project activities.

20. Seeds used for all project and compensation activities shall conform to the Virginia Seed Law (Sections 3.1-262 Code of Virginia) and Virginia Seed Regulations (2 VAC 5-290-10 et seq).

21. Erosion and sedimentation controls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992, or the most recent version in effect at the time of construction. These controls shall be placed prior to clearing and grading activities and shall be maintained in good working order, to minimize impacts to surface waters. These controls shall remain in place only until clearing and grading activities cease and these areas have been stabilized.

22. All *non-impacted* wetlands, streams, and designated upland buffers that are within the project or right-of-way limits, and that are within fifty feet of any project activities, shall be clearly flagged or demarcated for the life of the construction activity within that area. All non-impacted open water areas within the project or right-of-way limits, and that are within fifty feet of any project activities, shall be clearly flagged or demarcated, as

practicable, for the life of the construction activity within that area. The permittee shall notify all contractors and subcontractors that *no activities are to occur in these marked areas*.

23. All required notifications and submittals shall be submitted to the DEQ office stated below, to the attention of the VWP permit manager, unless directed in writing by DEQ subsequent to the issuance of this permit:

    Department of Environmental Quality
    Southwest Regional Office
    P.O. Box 1688
    355 Deadmore Street
    Abingdon, VA 24210

24. All reports required by this permit and other information requested by DEQ shall be signed by the permittee or a person acting in the permittee's behalf, with the authority to bind the permittee. A person is a duly authorized representative only if *both* criteria below are met. If a representative authorization is no longer valid because of a change in responsibility for the overall operation of the facility, a new authorization shall be immediately submitted to DEQ.

    a. The authorization is made in writing by the permittee.

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

25. All submittals shall contain the following signed certification statement:

    "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

26. Any fish kills or spills of fuels or oils shall be reported to DEQ immediately upon discovery at 276 676-4800. If DEQ cannot be reached, the spill shall be reported to the Virginia Department of Emergency Management (DEM) at 1-800-468-8892 or the National Response Center (NRC) at 1-800-424-8802.

27. DEQ shall be notified in writing within **24 hours or as soon as possible on the next business day** when potential environmentally threatening conditions are encountered which require debris removal or involve potentially toxic substances. Measures to

remove the obstruction, material, or toxic substance or to change the location of any structure are prohibited until approved by DEQ.

28. The permittee shall notify the DEQ of any additional impacts to surface waters, including wetlands; and of any change to the type of surface water impacts associated with this project. Any additional impacts, modifications, or changes shall be subject to individual permit review and/or modification of this permit. Compensation may be required.

D. Stream Modifications:

1. Any exposed slopes or streambanks shall be stabilized immediately upon completion of work in each impact area. Methods and materials for stabilization shall be in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992, or the most recent version in effect at the time of construction.

2. Redistribution of existing stream substrate for erosion control purposes is prohibited.

3. Material removed from the stream bottom shall not be deposited into surface waters unless otherwise authorized as fill material in this permit.

4. Riprap apron for all outfalls shall be designed in accordance with Virginia Erosion and Sediment Control Handbook, Third Edition, 1992, or the most recent version in effect at the time of construction.

5. For streambank protection activities, structures and backfill shall be placed as close to the streambank as practical, while still avoiding and minimizing impacts to vegetated wetlands to the maximum extent practical. No material shall be placed in excess of the minimum necessary for erosion protection.

6. Asphalt and materials containing asphalt or other toxic substances shall not be used in the construction of underdrains, submerged sills, breakwaters, dams, or weirs.

7. If stream channelization or relocation is required, all work in surface waters shall be done in the dry, unless authorized by this permit, and all flows shall be diverted around the channelization or relocation area until the new channel is stabilized. The diversion shall be accomplished by leaving a plug at the inlet and outlet ends of the new channel during excavation. Once the new channel has been stabilized, flow shall be routed into the new channel by first removing the downstream plug and then the upstream plug. The new stream channel shall be constructed following the typical sections submitted with the application and should incorporate natural stream channel design principles to the greatest extent practicable. A low flow channel shall be constructed within the channelized or relocated area. The centerline of the channel shall meander, to the extent possible, to mimic natural stream morphology. The rerouted stream flow shall be fully established before construction activities in the old streambed can begin.

E. Project Construction Monitoring and Submittals (Impact Site)

1. The permittee shall conduct photographic monitoring of pre-construction conditions in permitted permanent and temporary impact areas covered by this permit. Photographic monitoring shall be conducted by the following method:

   Enumerated photo stations shall be established at each permitted impact area that shall be used for the duration of construction activities. The directional orientation of each photo station shall remain constant during all monitoring events. Photo stations shall be sufficient to represent permitted activities. Photo stations may be established via water craft or temporary floating structures. Each photograph taken shall be labeled with the permit number, the permitted impact area, the photo station number, the photograph orientation, the date and time of the photograph, the name of the person taking the photograph, and a brief description of the photograph subject. This information shall be provided as a separate attachment to each photograph, if necessary.

2. Final plans for the project construction activities authorized by this permit shall be submitted **30 calendar days** prior to initiating any land disturbance or construction in permitted impact areas. Construction activities shall not be initiated until DEQ has both reviewed and commented on the plans, or until **30 calendar days** have passed, during which time no DEQ comments were received regarding the plan. In the event DEQ submits comments on the final plans, construction shall not proceed until comments are resolved to DEQ's satisfaction.

3. Construction shall be performed in accordance with the final construction plans submitted to DEQ. Final construction plans shall include the location and orientation of all photo monitoring stations. Any changes to the final plans for permitted areas shall be submitted to DEQ immediately upon determination that changes are necessary. DEQ approval shall be required prior to implementing the changes.

4. The permittee shall submit written notification at least **ten calendar days** prior to the initiation of land disturbance or construction activities in permitted areas. The notification shall include a projected schedule for initiating and completing work at each permitted impact area.

5. The permittee shall conduct photographic monitoring of construction activities to document that the permitted activities are in compliance with permit conditions, and to document any events that are not in compliance with the construction-related permit conditions. The permittee shall use the same photo method and location that was used for pre-construction monitoring.

6. Photographic monitoring during activities in each permitted impact area shall be required during the best timeframe to suit the proposed construction schedule.

7. For temporary disturbances to surface waters, the permittee shall conduct photographic monitoring **after** the temporary disturbance activity is complete in order to document that the area has been restored in compliance with these permit conditions.

8. Construction photographic data, except for temporarily disturbed surface waters, shall be submitted with construction monitoring reports as detailed in Part I.E.10.

9. Construction Monitoring Reports shall be submitted to DEQ annually. The reports shall be submitted by **December 31 of each year** in which monitoring takes place. The reports shall include the following, as appropriate:

   a. A written narrative stating whether or not work was performed during the monitoring period in each permitted impact area. If work was performed, the narrative shall include a description of the work performed, when the work was initiated, and the expected date of completion.

   b. A summary of activities conducted to comply with the permit conditions, including items associated with meeting specific permit conditions and a description of erosion and sediment controls used to protect water quality and any maintenance performed on the controls.

   c. A written summary, including photographs, of non-compliance events or problems encountered, any corrective actions taken, and any subsequent notifications to DEQ.

   d. A summary of anticipated work to be completed during the next reporting period, and an estimated date of construction completion at all permitted impact areas.

   e. A labeled site map depicting all permitted impact areas and photo stations.

   f. Properly labeled photographs, including those documenting the completed restoration of temporarily disturbed surface waters. The first construction monitoring report shall also include the photographs taken at each permitted impact area prior to initiation of land disturbance or construction activities in that area.

10. The permittee shall conduct photographic monitoring of all permitted impact areas upon completion of construction and stabilization of the area. The permittee shall use the same photo method and location that was used for pre-construction monitoring.

11. Post-construction photographs of permitted impact areas shall be submitted within **30 calendar days** of completing the project**.**

12. The permittee shall submit written notification within **30 calendar days** after the completion of all construction activities in all permitted impact areas authorized under this permit.

F. On Site Creation, Restoration, and Preservation Compensatory Mitigation

1. The permittee shall provide *on-site* stream compensation by restoring approximately 1,580 linear feet of Meade Creek using a design that mimics natural stream channel pattern and profile. The compensation site shall be preserved in perpetuity, as described in the final stream compensation plan and Part I.H.3.j.

2. The permittee shall provide *on-site* wetlands compensation by enhancing at least two acres of emergent wetlands adjacent to the restored Meade Creek stream channel. The compensation sites shall be preserved in perpetuity, as described in the final wetlands compensation plan and Part I.H.3.j.

3. The permittee shall provide *on-site* wetlands compensation by preserving in perpetuity the entire drainage area contributing surface water flow along approximately 6,100 feet of intermittent stream channel in Maize Hollow.

G. On Site Creation, Restoration, and/or Preservation Standard Conditions

1. The permittee is responsible for meeting all of the components of the compensatory mitigation requirements associated with this permit. This responsibility can only be transferred if and when the permit is transferred to another party and then only to the new permit recipient.

2. The final wetlands and/or stream compensation plan (final compensation plan), as prepared in accordance with Part I.H of these conditions, shall be approved by DEQ prior to any construction activity in permitted impact areas. DEQ shall have **60 calendar days** to review and either provide written comments to the permittee or approve the final compensation plan. The final compensation plan as approved by DEQ shall be an enforceable requirement of this permit. Any change to the approved final compensation plan must be submitted to DEQ for approval prior to implementing the change.

3. For compensation sites involving land disturbance, a site stabilization plan shall be implemented prior to compensatory mitigation construction activities.

4. If compensation site construction has not commenced within **180 calendar days** of beginning a construction activity in *any* permitted impact area, work in the permitted impact areas shall cease, unless otherwise authorized by DEQ.

5. Planting of woody plants shall occur when vegetation is normally dormant unless otherwise approved in the final compensation plan.

6. Vegetation shall be native species common to the area and shall be suitable for growth in local wetland and/or riparian conditions.

7. All vegetation removal for control purposes shall be done by manual means, unless authorized by DEQ in advance. Herbicides or algacides shall not be used in or immediately adjacent to compensation areas without prior authorization by DEQ.

8. Point sources of stormwater runoff shall be prohibited from entering any compensation site prior to treatment by appropriate best management practices (BMPs) that are designed, installed, and maintained as described in the Virginia Erosion and Sediment Control Handbook (Third Edition, 1992, or the most recent version in effect at the time of construction) and the Virginia Stormwater Management Handbook (First Edition, 1999, or the most recent version in effect at the time of construction). Appropriate best management practices may include sediment traps, grassed waterways, vegetated filter strips, debris screens, oil and grease separators, and forebays. Installation of alternative practices not described in these references shall be submitted to DEQ for approval prior to beginning construction.

9. All *non-impacted surface waters* and designated upland buffers that are within the compensation site limits, and that are within fifty feet of any compensation site activities, shall be clearly flagged or demarcated for the life of the activity within that area. Open water areas should be demarcated as practicable. The permittee shall notify all contractors and subcontractors that *no activities are to occur within these marked areas*. However, encroachment upon the 50 foot buffer may be permissible to allow for the relocation of Singapura Road provided that the encroachment is minimized to the greatest extent practicable and the areal extent of the buffer is increased in the adjacent areas to compensate for the unavoidable encroachment.

10. All required notifications and submittals shall be submitted to the DEQ office stated below, to the attention of the VWP permit manager, unless directed in writing by DEQ subsequent to the issuance of this permit.

    Virginia Department of Environmental Quality
    Southwest Regional Office
    P.O. Box 1688
    355 Deadmore Street
    Abingdon, VA 24212-1688

11. All reports required by this permit and other information requested by DEQ shall be signed by the permittee or a person acting in the permittee's behalf, with the authority to bind the permittee. A person is a duly authorized representative only if *both* criteria below are met. If a representative authorization is no longer valid because of a change in responsibility for the overall operation of the facility, a new authorization shall be immediately submitted to DEQ.

    a. The authorization is made in writing by the permittee.

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

12. All submittals shall contain the following signed certification statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Compensation Site Construction Tasks, Monitoring, and Submittals

Pre-Construction Tasks

1. The permittee shall conduct photographic documentation of pre-construction conditions at the stream and wetland compensation site by the following method:

   a. Permanent photo stations, whose directional orientation shall remain constant during all monitoring events, shall be used for each monitoring event. The photo stations shall be identified in the final stream compensation plan (final compensation plan). At each station, a sufficient number of photographs shall be taken from the center of the stream, facing downstream, so that the entire length of the restoration site is captured.

   b. Photographs of existing conditions shall be taken prior to the commencing activities at the compensation site. Photographs at the compensation site shall not be required until land disturbance or construction activities are initiated on the compensation site.

   c. Each photograph shall be labeled with the permit number, the name of the compensation site, the photo station number, the photograph orientation, the date and time of the photograph, the name of the person taking the photograph, and a brief description of the photograph subject. If necessary, this information shall be provided as a separate attachment to each photograph.

Pre-Construction Submittals

2. DEQ shall be notified in writing at least **ten calendar days** prior to the initiation of construction activities at the compensation site. The notification shall include a projected schedule of activities and construction completion.

3. The permittee shall submit a final stream compensation plan, which shall include, at a minimum, the following:

   a. The goals and objectives of the stream compensation plan, including but not limited to classification of the existing stream being impacted, how the restorative measures are replacing/enhancing/preserving stream functions and values, the components of the compensation expressed in linear feet, and a summary of

geomorphologic parameters of the existing stream, reference stream(s), and the proposed stream (e.g., stream width, spacing and depth of pools and riffles, entrenchment ratio, width-depth ratio, cross-sectional area, bank-height ratio, radius of curvature, belt width, sinuosity, slope, substrate, etc.);

b. A detailed description of all proposed compensation measures, which may include:
   (1) stream channel and streambank stabilization activities;
   (2) bank sloping;
   (3) shaping and bench features, including grading;
   (4) bank stabilization measures (e.g., rootwads, fiber rolls, live staking);
   (5) instream structures (e.g., type and proposed function of cross vane, J-hook, W-weir, etc.);
   (6) channel alterations, which may include elevation, slope, width/depth ratio, cross-sectional area, sinuosity, and pool-riffle complexes;
   (7) stream channel relocation activities;
   (8) floodplain design;
   (9) riparian buffer plantings, including planting scheme, schedule, species, soil preparations, and buffer width;
   (10) measures limiting livestock access;
   (11) stream preservation; and
   (12) removal of existing unnatural instream structures (e.g., dams);

c. Plan view, profile, and cross-section sketches, including the identification of all compensation measures;

d. The schedule for compensation site construction, including projected start date, sequence of events with projected dates, and projected completion date;

e. A location map, including compensation site boundaries, latitude and longitude (to the nearest second) at the center of the compensation site, and the watershed name and 8-digit Hydrologic Unit Code in which the compensation site is located;

f. Grading and erosion and sedimentation control plans;

g. A surrounding land use and access plan for the compensation site;

h. A success criteria monitoring plan including:

   (1) the monitoring design and methodologies being used to evaluate the success of the proposed compensation measures, allowing comparison from year to year and to the As-Built survey detailed in Part I.J.9;

   (2) the proposed success criteria for appropriate compensation measures;

   (3) monitoring and reporting schedule, including the visual inspection schedule for bank pins and scour chains; annual compensation site survey methods, schedule, etc.; and frequency of photographic monitoring; and

(3) sketch(es) depicting location of all monitoring stations, including photo stations, vegetation sampling points, survey points, bank pins, scour chains, and reference streams;

(4) corrective action and/or contingency plan to address compensation site problems, deficiencies, or unexpected events

i. A monitoring and control plan for undesirable plant species: the plan shall apply, at a minimum, to the species listed on DCR's Invasive Alien Plant Species of Virginia list; shall include the procedures to notify DEQ of any undesirable plant species occurrences, the methods to be used for removal and control, and the method of reporting the control results to DEQ; and shall be implemented whenever an invasive species, either individually or cumulatively, becomes a dominant species in any stream compensation site;

j. Proposed deed restriction language for protecting the compensation site, including all surface waters and upland areas that are to be preserved in perpetuity within the compensation site boundary. Protection of the compensation site shall be documented as follows:

(1) The protected areas shall be surveyed or platted within **120 calendar days** of final compensation plan approval by DEQ. The final survey or plat shall be certified by a professional engineer or licensed land surveyor and shall be submitted to DEQ for review. DEQ shall have **15 calendar days** to review the survey or plat to verify that the protected areas are the same as those presented in the final compensation plan.

(2) The protective instrument shall be written so that no activity will be performed on the property in any area designated as a compensation site or non-impacted surface water, with the exception of maintenance or corrective action measures authorized by DEQ. Unless otherwise authorized by DEQ, the restrictions apply to ditching, land clearing, or the discharge of dredge or fill material. The protective instrument restrictions shall contain the phrase "ditching, land clearing, or discharge of dredge or fill material" in the limitations placed on the use of these areas.

(3) The protective instrument shall be recorded in the chain-of-title to the property on which the compensation site exists. Proof of recordation shall be submitted to DEQ within **60 calendar days**, following DEQ's review and confirmation of the surveyed or platted compensation site.

4. The final compensation plan shall also address wetlands compensation and include, as appropriate, the following information:

a. The goals and objectives of the plan, including but not limited to classification of the existing wetlands being impacted, how the compensation is replacing/enhancing/preserving wetland functions and values, the components of

the compensation expressed in acres, the proposed vegetation types, and the wetland classification;

b. Discussion of associated buffers;

c. The schedule for compensation site construction, including projected start date, sequence of events with projected dates, and projected completion date;

d. A location map, including the compensation site boundaries, the latitude and longitude (to the nearest second) at the center of the compensation site, and the watershed name and the 8-digit Hydrologic Unit Code in which the compensation site is located;

e. For overbank flood-driven systems, gaging station data and a floodplain analysis, including a minimum 10-year continuous simulation which will account for variability in inputs and outputs under varying conditions;]

f. Design of water control structures;

g Wetland delineation confirmation, data sheets, and maps for existing wetland areas on the compensation site, and any collectible information on reference wetlands adjacent to or near the compensation site;

h. Grading and erosion and sediment control plans;

i A planting scheme and schedule, including but not limited to, suggested plant species, zonation, and acreage of each vegetation type proposed;

j. A soil preparation and amendment plan addressing both topsoil and subsoil conditions;

k. A surrounding land use and access plan for the compensation site;

l. A success criteria monitoring plan including:

(1) the monitoring design and methodologies being used to evaluate the success of the proposed compensation site;

(2) the monitoring and reporting schedule;

(3) the proposed success criteria for the compensation measures, including discussion of structures and features necessary for the success of the compensation site;

(4) sketch(es) depicting the location of photo stations, monitoring wells, soil sampling points (as appropriate), vegetation sampling points, and reference wetlands (if available);

(5) corrective action and/or contingency plan to address compensation site problems, deficiencies, or unexpected events;

Monitoring During Construction

5. Photographic monitoring of compensation site construction shall be required at the end of each month, and at the end of compensation site construction.

6. Photographic monitoring shall be conducted in accordance with the methods detailed in Part I.H.1.

7. For temporary disturbances to surface waters, the permittee shall conduct photographic monitoring **after** the temporary disturbance activity is complete in order to document that the area has been restored in compliance with these permit conditions.

8. Monitoring of water quality parameters shall be conducted during relocation of any flowing stream through a new channel. Corrective measures and additional monitoring may be required if water quality standards are not met. The permittee shall report violations of water quality standards to DEQ within **24 hours** of monitoring. All monitoring data shall be submitted to DEQ within **seven calendar days** of the monitoring event. The method for monitoring water quality parameters shall be as follows:

   a. One sampling station shall be located upstream of the relocated channel, and one sampling station shall be located immediately downstream of the relocated channel.

   b. At the *upstream* sampling station, temperature, pH, and dissolved oxygen (D.O.) measurements shall be taken immediately *before* opening a new channel, and every 30 minutes thereafter for at least *two* hours.

   c. At the *downstream* sampling station, temperature, pH, and dissolved oxygen (D.O.) measurements shall be taken immediately *after* opening a new channel, and every 30 minutes thereafter until the measurements indicate that the site has stabilized (minimum of *three* hours).

Submittals for Construction Monitoring

9. Compensation site construction monitoring reports shall be submitted within **30 calendar days** of each monitoring event. The reports shall include the following, as appropriate:

   a. A summary of construction progress, including any problems encountered and the proposed corrective actions or the DEQ-approved corrective actions taken.

   b. Properly labeled photographs as detailed in Part I.H.1. The first construction monitoring report shall include the photographs taken at each photo station prior to commencing land disturbance or construction activities at the compensation site.

10. The permittee shall submit an As-Built survey, including spot elevations, of the stream compensation site within **90 calendar days** of compensation site completion. A licensed land surveyor or a licensed professional engineer shall certify the survey. The survey shall include a narrative comparing the As-Built survey with the design plans or reference reach information. DEQ shall have **30 calendar days** to review the survey and provide comments to the permittee.

Monitoring for Success Criteria After Construction

11. Success monitoring of the compensation site shall begin at the first complete growing season (monitoring year one) following compensation site construction. Success monitoring shall be conducted on the frequency and for the time period stipulated in the approved final compensation plan.

12. If all success criteria have not been met by **November 30th** of the last monitoring year specified in the approved final compensation plan, or if visual observations conclude that the site has not met the overall restoration goals, corrective actions shall be implemented in accordance with the DEQ-approved corrective action plan. Annual monitoring shall be continue until two sequential, annual reports indicate that all criteria have been successfully satisfied (e.g., that corrective actions were successful) and the compensation site has met the overall restoration goals. The permittee shall be solely responsible for ensuring that all necessary corrective actions are implemented so that the compensation area meets the success criteria, as detailed in the final compensation plan. Should any significant changes to the compensation site be necessary, the monitoring period shall be extended such that monitoring year one commences after the changes are complete, and the total monitoring period has been met.

13. Photographic documentation during success monitoring shall be conducted as specified in the final compensation plan approved by DEQ.

14. Vegetation monitoring (including both riparian and wetland vegetation) shall be conducted in **August or September** of each monitoring year as detailed in the final compensation plan. Undesirable plant species shall be identified and controlled as described in the monitoring and control plan for undesirable plant species, such that they are not dominant species or do not change the desired community structure.

15. Monitoring for the presence of hydric soils or soils under hydric conditions shall be conducted in accordance with the final compensation plan approved by DEQ.

16. Wildlife data collection shall be conducted in accordance with the final compensation plan approved by DEQ.

17. At the completion of each monitoring year, a calculation of the acreage of each wetland type shall be made and shall be based upon that monitoring year's soils data, vegetation data, and hydrology data (if required). The acreage calculation shall be shown on the

most recent version of the compensation site design plan sheet(s) and shall be submitted with that year's monitoring report.

18. Within **60 calendar days** of the completion of the entire monitoring cycle, including any time extensions for corrective action, a wetland boundary survey shall be conducted by a licensed land surveyor or a licensed professional engineer, and shall be based upon the results of monitoring data for soils, vegetation, and hydrology. A calculation shall be made of the total acreage of each wetland type. The boundary and acreage per wetland type shall be shown on the most recent version of the compensation site design plan sheet(s).

19. All bank pins and scour chains used to monitor bank and channel stability shall be monitored and measured each monitoring year on the frequency detailed in the DEQ-approved final compensation plan. Maintenance on bank pins and scour chains shall be conducted within **30 days** of each inspection.

20. At the completion of each monitoring year, the stream compensation site shall be surveyed. The survey shall be certified by a licensed land surveyor or a licensed professional engineer. The survey shall include, at a minimum, the stream classification, the required stream cross-sections, a longitudinal profile (including Thalweg, bankfull, and top of bank measurements), a pebble count, all instream structures, and other required information as detailed in the approved final compensation plan.

Submittals for Success Criteria Monitoring

21. Compensation site monitoring reports shall be submitted by **December 31st** of the years in which a monitoring report is required, including the final monitoring year, as identified in the approved final compensation plan. The reports shall include the following, at a minimum:

    a. A general description of the site including a site location map identifying photo stations, monitoring stations, vegetation sampling points, survey points, bank pins, and scour chains;

    b. Summary of activities completed during the monitoring year;

    c. For monitoring year one, an evaluation and discussion of the monitoring methods and results in relation to the success criteria;

    d. For monitoring years two through five, an evaluation and discussion of the monitoring methods and results in relation to the success criteria, and a comparison between the current year’s monitoring results and site conditions and the previous year’s results and conditions;

    e. Discussion of the stream geomorphologic parameters measured, including channel dimension, pattern, profile, and materials within defined stream type, as they relate to channel or stream bank stability;

f. Discussion of the establishment of vegetation, both planted and volunteers;

g. Evaluation of hydric soils or soils under hydric conditions;

h. Summary of wildlife or signs of wildlife observed at the compensation site;

i. Discussion of macroinvertebrate sampling data;

j. Evaluation of instream structures;

k. Discussion of observed success of livestock access limiting measures;

l. Properly labeled photographs;

m. The stream survey and classification;

n. Discussion of alterations, maintenance, and/or major storm events resulting in significant change in stream profile or cross section; and

o. Corrective action plan, if necessary, which shall include any proposed actions or maintenance activities, a schedule, and a monitoring plan (e.g., repair of instream structures due to storm event).

22. *For final monitoring year only*, the report shall include all items in Part I.H.21 and the most recent version of the compensation site design plan sheet(s) depicting the final wetland boundary and area calculations, as detailed in Part I.H.17.